

REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Upon entry of the above amendments, claims 1-12 will remain pending.

Each of claims 1, 8, 11 and 12 is amended by replacing "greater than" with --at least-- and further correcting "0.3" to --0.2--. A spelling error in the transcribe claim 2 is corrected.

The expression "an uncoated and unfilled acrylic polymer" is retained. Applicant disagrees that the quoted expression introduces NEW matter.

That the subject application conveys that applicant was in possession of uncoated and unfilled compositions follows from a reading of the specification even if the exact terminology does not appear. For instance, the specification on page 1, lines 24-31, refer to use of fillers in connection with prior art curable acrylic compositions but notes that, even at lower concentrations of fillers, optical properties are poor in that the resulting polymer is hazy. The specification at page 2, lines 2-4 explains that acrylic articles having better resistance to abrasion than unfilled acrylic materials are provided by the invention. Still further, the specification at page 4, lines 12-15, notes that among others, "fillers" are optional ingredients. In fact, in the working examples, fillers are not used.

Similarly, the specification clearly conveys that Applicant was in the possession of such acrylic materials which are not coated. See, for example, page 4, lines 20-31 and the examples.

For completeness, it is noted that at least claim 9 did not, at the time of the rejection, include any of the terms considered to be in non-compliance with 35 USC 112, first paragraph.

For the above reasons, the rejection under 35 USC 112, first paragraph, is respectfully traversed.

Similarly, the rejection of claims 1-10, under 35 USC 112, second paragraph, is respectfully traversed.

The Examiner suggests that the presence of up to 5% w/w of metal oxides correlates to filled.

Applicant respectfully points out that the finely divided metal oxide component is not a filler and would not be understood as such by the practitioner. Fillers are particles which have particles sizes substantially greater than the finely divided metal oxide particles, in particular, particles sizes greater than the wavelength of light, i.e., above about 400 nm, such

that the filler particles may be seen in the filled film. These larger particle sizes are required in order that the filler may fulfill its function in imparting reinforcement and/or optical properties. It is well established that below a critical fiber length reinforcement is not achieved.

Therefore, the instant finely divided particles are not equivalent to fillers and the inclusion in the subject compositions is not at odds with the fact that the compositions are "unfilled."

Accordingly, the rejection of claims 1-10 under 35 USC 112, second paragraph should be withdrawn.

Claims 1-3, 7, 8 and 10-12 are rejected under 35 USC 102(b) as anticipated by WO 97/14749.

Applicant disagrees and traverses this rejection for the following reasons.

Although the Examiner refers to the Abstract, there is no mention therein of metal oxide.

In Example 1, however, white and black polymer particles were prepared and to this end, the composition of the white particles includes 50% TiO_2 pigment particles. In contrast, Example 2 is directed to "clear, unpigmented polymer particles." From this disclosure, it becomes unambiguously clear that the titanium dioxide particles in Example 1 are not finely divided particles and that, instead, the composition of Example 1 is a filled polymer particle.

Accordingly, the disclosure of Example 1 or the rest of WO 97/14749 is not an anticipation of claims 1-3, 7, 8 or 10-12.

Claims 11 and 12 are considered to be unpatentably obvious under 35 USC 103(a) in view of Minghetti et al (US 5,705,552).

Again, Applicant disagrees.

Minghetti relates to thermoformable acrylic sheets having uniform distribution of color and mineral fillers. The amount of particles is from 25 to 50 weight percent (col. 3, lines 40-43) and, in Example 1 is 40% of ATH (alumina trihydrate) and in Example 2, the amount of ATH is 39.92% and in claim 1, the amount of particles is from 20 to 60% of the composition.

Accordingly, the disclosure of Minghetti, irrespective of the similarities or dissimilarities with the finely divided metal oxides of the present invention, does not render obvious a composition wherein the amount of the metal oxide particles is from 0.2 to 5% w/w.

Therefore, the rejection of claims 11 and 12 as unpatentably obvious over Minghetti should be withdrawn.

Claim 9 is rejected under 35 USC 102(b) as anticipated by Smiley (US 4,145,477).

Reconsideration and withdrawal of this rejection is requested for at least the following reasons.

According to Smiley, hydrated alumina comprises from about 40 to 80% by weight of the resin, fiber and filler.

Therefore, aside from the observation that this amount is higher than the amount of metal oxide set forth in claim 9, there is no disclosure of adding a dispersion of finely divided metal oxide.

For the above reasons, the rejection of claim 9 as unpatentably obvious over Smiley should be withdrawn.

Finally, claims 1-12 are rejected under 35 USC 103(a) as unpatentably obvious over Kawase et al (US 5,753,362).

Applicant respectfully disagrees and traverses this rejection for at least the following reasons.

As noted above and as described in the specification, the present invention provides polymerizable acrylic compositions which may, for example, be thermoformed, or otherwise formed into acrylic articles, wherein the resulting articles are substantially free of haze and still have very good abrasion resistance. The prior art, in general, including Kawase, has not taught compositions, methods or articles having these properties.

For instance, in Examples 1 (col. 28) and 8 (col. 32) for forming transparent sheets, neither filler nor finely divided metal oxide are present. Nor is there a clear disclosure of abrasion resistant acrylic sheets or how finely divided metal oxide particles could be used (including the types or amounts thereof) to effect abrasion resistant low or no haze acrylic sheets. There is no disclosure of a composition which is uncoated and unfilled and which contains at least 70 % w/w of polymerizable acrylic monomer, 0.3 to 5% w/w of finely divided oxide of silicon, titanium, zirconium or aluminum, and 0.2 to 25% w/w of at least one linking compound as required by claim 1 and claim 8 or the production process for such compositions as in claims 11 and 12.

There is no disclosure or suggestion of finely divided oxide compound having an average particle size between 1 and 50 nanometers, as in claim 6.

The method of claim 9 is not fairly suggested by the disclosure of Kawase.

If the Examiner intends to maintain this rejection it is respectfully requested that the disclosure of the reference be more particularly applied to the rejected claims, it being submitted that the isolated teachings from col. 12, lines 17-56, col. 19, lines 15-20 and col. 24, lines 1-2, would not have raised a case of *prima facie* obviousness.

Reconsideration and withdrawal of the rejection based on Kawase is respectfully requested.

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

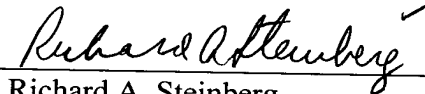
Attached is a marked-up version of the changes made to the specification and claims by the current amendment. The attached Appendix is captioned "Version with markings to show changes made".

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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Enclosure: Appendix

APPENDIX: VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

1. (Twice Amended) An uncoated and unfilled acrylic polymer product obtained from an acrylic composition comprising [greater than] **at least** 70 % w/w of the residues of at least one polymerizable acrylic monomer, [0.3] **0.2** – 5 % w/w of a finely divided compound comprising at least one oxide selected from silicon, titanium, zirconium and aluminum oxides, and 0.2-25 % w/w of at least one linking compound which is miscible with said polymerizable acrylic monomer and which is capable of bonding to the surface of the oxide compound.
2. (Twice amended) A product as claimed in claim 1, wherein the linking compound contains at least one functional group which is [copolymerizable] **copolymerizable** with the acrylic monomers and a polar group and which is capable of bonding to the surface of the oxide compound.
8. (Twice Amended) An uncoated and unfilled acrylic polymer product obtained from a polymerizable composition comprising [greater than] **at least** 70 % w/w of at least one polymerizable acrylic monomer, [0.3] **0.2** – 5 % w/w of a finely divided compound comprising at least one oxide selected from silicon, titanium, zirconium and aluminum oxides, and 0.2-25 % w/w of at least one linking compound which is miscible with said polymerizable acrylic monomer and which is capable of bonding to the surface of the oxide compound.
11. (Amended) Process of manufacturing an uncoated abrasion resistant polymer product comprising polymerizing and shaping an acrylic composition comprising [greater than] **at least** 70 % w/w of the residues of at least one polymerizable acrylic monomer, [0.3] **0.2** – 5 % w/w of a finely divided compound comprising at least one oxide selected from silicon, titanium, zirconium and aluminum oxides, and 0.2-25 % w/w of at least one linking compound which is miscible with said polymerizable acrylic monomer and which is capable of bonding to the surface of the oxide compound.

12. (Amended) Process of manufacturing an uncoated abrasion resistant polymer product comprising polymerizing and shaping a polymerizable composition comprising [greater than] at least 70 % w/w of at least one polymerizable acrylic monomer, [0.3] 0.2 – 5 % w/w of a finely divided compound comprising at least one oxide selected from silicon, titanium, zirconium and aluminum oxides, and 0.2-25 % w/w of at least one linking compound which is miscible with said polymerizable acrylic monomer and which is capable of bonding to the surface of the oxide compound.

End of Appendix